

**CLINICALLY SIGNIFICANT CHANGE AFTER COGNITIVE
RESTRUCTURING FOR ADULT SURVIVORS OF CHILDHOOD SEXUAL
ABUSE**

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Abstract

Declaration

This study investigated the outcome of a self-directed shoulder and negative affective recovery program in terms of clinically significant change. Impact on pain, mood, depression, State anxiety, State anger, State guilt and self-efficacy beliefs were assessed. Sessions of group Rational-emotive behaviour therapy and self-help up to 12 weeks were conducted. A post-hoc analysis of the data in terms of Rational-emotive behaviour therapy was conducted. I, the undersigned, hereby declare that the work contained in this assignment is my own original work, and that I have not previously in its entirety or in part submitted it at any university for a degree.

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Date

Abstract

This study investigated the outcome of cognitive restructuring for adult survivors of childhood sexual abuse in terms of clinically significant change. Twenty-six participants were assessed for depression, State anxiety, State anger, State guilt and self-esteem before and after 10 weekly sessions of group Rational-emotive behaviour therapy and at follow-up after 8 weeks. In contrast to a previous analysis of the data in terms of statistical significance indicating significant improvements on all variables from pre- to post-treatment, an analysis based on clinically significant change showed a differentiated treatment effect. Cognitive restructuring was found to be highly effective in facilitating recovery on measures of anxiety, depression and anger, but less effective for guilt and self-esteem. Only 3 participants (11.54%) recovered on all five variables, while 10 participants (38.46%) showed recovery on at least four variables. Relationship to perpetrator and pre-treatment irrational evaluative beliefs (measured by means of the Survey of Personal Beliefs) were found to be the best predictors of treatment outcome. A poor response to treatment was associated with the perpetrator being a close family member and with more Other-directed Shoulds, while recovery was associated with the perpetrator being a friend or stranger and with more Awfulizing, Self-directed Shoulds and Negative Self-worth beliefs.

Opsomming

In hierdie studie is die uitkoms van kognitiewe herstrukturering, as behandelingsprosedure vir volwasse slagoffers van kindermolesteuring, in terme van kliniese betekenisvolheid ondersoek. Ses-en-twintig deelnemers is voor en na behandeling (10 weeklikse groepsessies van Rasioneel-emotiewe gedragsterapie) en by opvolg na 8 weke in terme van depressie, Staat-angs, Staat-woede, Staat-skuldgevoelens en selfwaarde geassesseer. In 'n vorige analise van die data in terme van statistiese betekenisvolheid is betekenisvolle verbetering na behandeling op al die veranderlikes gevind. 'n Heranalise van die data in terme van kliniese betekenisvolheid toon egter 'n gedifferensieerde behandelingseffek. Daar is gevind dat kognitiewe herstrukturering hoogs effektief was om herstel in terme van angs, depressie en woede te fasiliteer, maar minder effektief was ten opsigte van skuld en negatiewe selfwaarde. Slegs 3 pasiënte (11.54%) het klinies betekenisvol op al vyf veranderlikes verbeter, terwyl 10 pasiënte (38.46%) op minstens vier veranderlikes herstel het. Die pasiënt se verhouding tot die molesteerder en irrasionele kennisies voor behandeling (gemeet met die Survey of Personal Beliefs) was die beste voorspellers van behandelingsuitkoms. 'n Swak respons op behandeling het verband getoon met 'n naby familielid as molesteerder en met meer Ander-gerigte Eise, terwyl herstel geassosieer het met 'n vriend of vreemdeling as molesteerder en met die irrasionele kennisies van Katastrofering, Self-gerigte Eise en Negatiewe Selfbeoordeling.

Contents

Declaration	ii
Abstract	iii
Opsomming	iv
1. Introduction	1
2. Literature review	1
3. Objectives	6
4. Method	
4.1 Participants	6
4.2 Measuring instruments	7
4.3 Procedure	9
5. Results	
5.1 Description of clinical significance	10
5.2 Clinically significant change after cognitive restructuring	10
5.3 Pretreatment variables as predictors of outcome	
5.3.1 Trauma-related variables	14
5.3.2 Patient-related variables	15
6. Discussion	16
References	19

1. Introduction

Childhood sexual abuse (CSA) has been defined as sexual activity involving a child or adolescent and a person at least five years older, whether or not overt coercion is involved (Beitchman et al., 1992).

Research on the prevalence of child sexual victimisation suggests that one in every four to five girls in the United States may be molested during childhood (Brown & Anderson, 1991; Finkelhor, Hotaling, Lewis, & Smith, 1990; Priest, 1992). In South Africa about 55% of all crimes against children under 18 years between 1993 and 1998 was of a sexual nature (South African Police Service, 1998).

Psychiatric disturbances associated with CSA include post-traumatic stress disorder (Jehu, 1991; Rodriguez, Ryan, Rowan, & Foy, 1996), mood disorders (Beitchman et al., 1992; Murrey et al., 1993), eating disorders (Mullen, 1993), dissociative disorders (Schulte, Dinwiddie, Pribor, & Yutzy, 1995) and personality disorders (Barnard & Hirsch, 1985; Coons & Milstein, 1986). Apart from these clinical syndromes, adult survivors of childhood sexual abuse are also at risk for developing a range of negative symptoms of varying degrees (Briere & Runtz, 1988), including depression (Gold, 1986; Gorcey, Santiago, & McCall-Perez, 1986), low self-esteem (Gold, 1986), guilt (Briere & Runtz, 1988), anxiety (Briere, 1984; Herman & Schatzow, 1987; Sedney & Brooks, 1984), anger (Briere, 1984; Scott & Day, 1996), interpersonal difficulties (Sheldon & Bannister, 1998), sexual problems and dissatisfaction (Dent-Brown, 1993; Stein, Golding, Siegel, Burnam, & Sorenson, 1988), and revictimisation (Briere, 1984; Runtz, 1987).

However, despite its high prevalence worldwide and the debilitating sequelae of CSA, a review of the literature revealed the treatment of CSA to be an underresearched area as relatively few randomised controlled trials were reported in this field.

2. Literature Review

✱ From a cognitive-behavioural perspective, only a few studies have been reported in which the cognitions or beliefs associated with survivors of childhood sexual abuse were investigated.

✱ In a study by Briere (1989) it was shown that survivors of childhood sexual abuse frequently have cognitions related to negative self-evaluations, hopelessness, helplessness and guilt. Pathogenic cognitive schemas have also been shown to occur in the core areas of independence, intimacy,

power, esteem, trust and safety (McCann & Pearlman, 1990). Adult survivors of childhood sexual abuse also appear to have maladaptive beliefs/schemata related to mistrust and vulnerability, incompetence and defectiveness (Zlotnick et al., 1996).

Wenninger and Ehlers (1998) conducted two studies with adult survivors of childhood sexual abuse. The first study consisted of 43 child sexual abuse survivors who were assessed for their attributional styles as well as their dysfunctional beliefs. These were measured by using the Expanded Attributional Style Questionnaire and the Personal Beliefs and Reactions Scale respectively. Results indicated that CSA survivors had a relatively stable negative attributional style and attributed negative events in their lives to internal, stable and global causes. Participants also showed dysfunctional beliefs regarding safety, trust, esteem and intimacy.

In a study by Waller and Smith (1994) it was found that women with a history of childhood sexual abuse who experienced a psychological disorder had significantly greater levels of self-denigratory beliefs and information-processing bias than similar women without a disorder.

Similarly, only a few studies investigating the effectiveness of cognitive-behaviour therapy for adult survivors of childhood sexual abuse were reported up till now (Rieckert & Möller, 2000).

Gazan (1986) conducted a treatment program for five adult female CSA survivors who were experiencing abuse-related sexual dysfunctions. The intervention consisted of three components, namely relaxation training, behavioural techniques and cognitive restructuring. The latter component consisted of educational materials, reattribution, decentering, distancing and logical analysis. The results of the study showed that cognitive restructuring improved these women's self-reported sexual functioning and was effective in modifying their beliefs about their roles in, and responsibility for, the sexual victimisation.

In a study of women in treatment for psychosocial problems due to CSA, Jehu (1989) utilised cognitive techniques to change the distorted thinking of the participants and thereby reduce their symptoms. These symptoms included depressive episodes, feelings of guilt and low self-esteem. The sample consisted of 51 women 18 years or older, with 90% between 20 and 39 years old. In 86% of the cases the women had been sexually abused before the age of 10 years. The cognitive techniques consisted of assigned activities, reattribution, distancing, decatastrophizing, logical analysis and education. Participants were treated either alone or conjointly, if they had a partner. The mean number of weekly sessions (of approximately 90 minutes each) was 21, with 75% of

patients treated for between 11 and 30 weeks. Results showed that cognitive restructuring significantly reduced the participants' distorted beliefs as measured by the Belief Inventory, along with improvements in the survivors' disturbed moods. A one-way repeated measures analysis of variance showed that the change on the average scores at assessment, termination and follow-up were statistically significant. Statistically significant improvement was also found on the Beck Depression Inventory (BDI) and the Hudson Index of Self-esteem.

Deblinger, McLeer and Henry (1990) reported on the outcome of a cognitive-behavioural intervention for sexually abused children which included gradual exposure, modelling, education, coping and prevention skill training. The participants were 19 girls who suffered contact sexual abuse, i.e. sexual touching, either with or without force. Their ages ranged from 3 to 16 years and they all met the DSM-III-R criteria for post-traumatic stress disorder (PTSD). Baseline data was obtained during the initial structured interviews and again 2 to 3 weeks later. After 12 treatment sessions the standardised measures, e.g. Child Depression Inventory (CDI), Child Behaviour Checklist (CBCL) and State-Trait Anxiety Inventory for Children (STAIC), were re-administered. Paired t-tests comparing pre- and post-treatment scores of PTSD symptoms for all 19 participants revealed statistically significant improvements across the PTSD symptom clusters. Results also indicated significant improvements on measures of depression (CDI), anxiety (STAIC) and the CBCL (Deblinger et al., 1990).

A study by Jehu and colleagues (1985) demonstrated that cognitive restructuring, as one component of a much more comprehensive and extended treatment program, was effective in both reducing cognitive distortions and improving mood (Jehu, Klassen, & Gazan, 1985). Beck's method of cognitive restructuring was used with a sample of 11 sexually abused women. The procedure was implemented in an individual or couples format rather than in groups and lasted 28 weeks of which the first 3 were for assessment purposes. The process started with the therapist explaining the rationale of cognitive restructuring followed by role-play, questionnaires and narrative accounts to assist the patients to become aware of their beliefs. Patients were then assisted to recognise any distortions in their beliefs. In the final stage the therapist elicited alternative more accurate and realistic beliefs.

The dependant variables measured were beliefs (Belief Inventory) and mood (BDI). The effectiveness of the treatment to reduce distorted beliefs was assessed in two ways. Firstly, improvement was defined as having a post-treatment score, on the Belief Inventory, falling below a cut-off point for clinically significant levels of distorted beliefs. This cut-off was defined as one

standard deviation below the mean of the initial scores for the 11 participants as measured by the Belief Inventory. Based on this criterion only one of the initial nine participants who exceeded the cut-off before treatment commenced, still exceeded it after treatment. Secondly, a one-way repeated measures analysis of variance was performed on the mean scores both pre- and post-treatment on the Belief Inventory, revealing a highly significant improvement on these scores. With regard to the effectiveness of the treatment in reducing mood symptoms, a one-way repeated measures analysis of variance (based on pre- and post-treatment scores on the BDI) also showed a statistically significant improvement in mood.

In a study by Foa, Rothbaum, Riggs and Murdock (1991) to evaluate the respective effectiveness of three therapeutic interventions (stress inoculation training, prolonged exposure and supportive counseling) for 45 rape survivors diagnosed with post-traumatic stress disorder, (the range of time since the assault being 3 months to 12 years with a mean of 6.2yrs and SD = 6.7yrs), a cognitive-behavioural approach administered to 14 participants produced significant improvements. Measures used were the Beck Depression Inventory, Rape Aftermath Symptom Test and standardised interviews assessing PTSD symptom severity. The stress inoculation treatment consisted of coping skills, muscle relaxation, controlled breathing, thought stopping, cognitive restructuring, guided self-dialogue, covert modelling and role-playing. The treatment consisted of nine biweekly 90 minute individual sessions (Foa et al., 1991). Findings showed that stress inoculation training produced significantly more improvement immediately after treatment on PTSD symptoms than did supportive counseling.

Smucker and colleagues conducted a study focusing on the effectiveness of imagery re-scripting for adult survivors of CSA suffering from post-traumatic stress disorder (Smucker, Dancu, Foa, & Niederee, 1995). They highlighted the fact that the positive schemas of the abuse survivor are often replaced by maladaptive schemas/beliefs such as profound mistrust, passivity, helplessness, powerlessness, guilt and degrading self-perceptions. These beliefs indicate the likelihood that fundamental assumptions were distorted and maladaptive schemas created.

The imagery re-scripting used in their pilot-study was designed to alleviate the symptoms of post-traumatic stress disorder and to alter abuse-related beliefs and schemas (Smucker et al., 1995). The treatment program consisted of nine sessions (90 minutes to 2 hours in length) comprising imaginal exposure and mastery imagery. Although indicators of cognitive change were subjective patient statements and excerpts of recorded sessions rather than objective test data, the results were promising. The preliminary results indicated a notable change in participant's maladaptive abuse-

related beliefs and none of the participants met the criteria for PTSD post-treatment or follow-up at 3 and 6 months respectively.

Hall and Henderson (1996) reported a case study of a female CSA survivor diagnosed with post-traumatic stress disorder, who was treated with a modified version of Resick's cognitive processing therapy. This therapeutic approach included exposure, cognitive restructuring, skill development and behavioural experiments. The format consisted of individual therapy and group participation and was conducted over a period of 17 weeks. Results showed that the patient's symptoms were greatly reduced over this period (Hall & Henderson, 1996).

In Echeburua, de Corral, Zubizarreta and Sarasua's (1997) study with 20 women suffering from post-traumatic stress disorder after CSA it was found that a combination of self-exposure and cognitive restructuring was more effective in reducing symptoms than progressive relaxation training. The sample consisted of women who were either raped in adulthood ($n = 11$) or were survivors of childhood sexual abuse ($n = 9$). All women were 16 years or older and met the DSM-III-R criteria for PTSD. A 2-group experimental design with repeated measures was used. Participants were evaluated pre-treatment, post-treatment and at 1-, 3-, 6- and 12-months after treatment. The self-exposure and cognitive restructuring treatment consisted of 6 weekly individual sessions amounting to a total of 7 hours. Cognitive restructuring focused on 3 areas: the normal reactions to sexual aggression and the process of acquiring and maintaining fears; modifying negative thoughts associated with the abuse; and resituating the abuse in its proper dimension and stressing the positive aspects of the new situation. Results showed that while most women improved to some extent, the success rate was higher across all measures in the exposure and cognitive restructuring group, both immediately at post-treatment and at follow-up (Echeburua et al., 1997).

Rieckert and Möller (2000), in their review of cognitive-behavioural treatment outcome studies for adult survivors of childhood sexual abuse, concluded that a need still exists for further research in this area. Not only was relatively little research reported up till now, but the majority of studies focused predominantly on survivors diagnosed with PTSD. No outcome studies were reported with adult survivors who experienced psychological distress, but did not meet the criteria for a psychiatric disorder. Most studies also investigated the effectiveness of a combination of treatment procedures, as previously described. Little is therefor known about the outcome of procedures such as cognitive restructuring or exposure alone for this population.

Consequently, Rieckert and Möller (2000) investigated the effectiveness of cognitive restructuring, based on Rational-emotive behaviour therapy in a sample of 40 female adult survivors of childhood sexual abuse. Participants were randomly assigned to a treatment ($n=26$) and a delayed treatment control group ($n=14$). The treatment group was randomly divided into two treatment subgroups and participated in 10 weekly sessions of Rational-emotive behaviour therapy and was followed up 8 weeks after termination of treatment. Results indicated significant reductions in depression, State anxiety, State anger, State guilt and significant improvement in self-esteem. These improvements were maintained at follow-up.

These results were based on a statistical analysis of the data. Jacobson and Truax (1991) criticised the conventional study of treatment effects only in terms of statistical comparisons between mean changes as limited in two respects. Firstly, this approach does not answer the question of how different individuals within the sample have responded, i.e. within-treatment variability. Secondly, statistically significant treatment effects only implies that a real, not illusory, difference between treatment and control groups exists. Therefore it remains uncertain as to the efficacy of the treatment as defined by whether it was potent enough to make a difference in the individual's life and functioning.

The benefits of clinical significant change information are that it addresses the above and other important issues. These include comparing various treatments, i.e. the establishment of the relative effectiveness of particular therapies for similar psychological problems. It is also useful for meta-analysis, answering simple outcome questions, and for predictive purposes.

3. Objectives

In response to the above-mentioned criticisms, the primary objective of the present study was to reanalyse Rieckert and Möller's (2000) data in terms of clinical significance. In addition, the study also aimed to investigate certain trauma-related variables (duration and severity of abuse) and specific patient-related variables (level of education, relationship to perpetrator, and pre-treatment symptomatology and dysfunctional beliefs) as possible predictors of treatment outcome.

4. Method

4.1 Participants

Participants were 42 adult female survivors of childhood sexual abuse, recruited from clinical psychologists and medical practitioners. They were seeking treatment for their unresolved

emotional problems associated with childhood abuse, but did not meet the DSM-III-R diagnostic criteria for either post-traumatic stress disorder or a mood disorder.

Their ages ranged between 20 and 35 years (mean = 28 years). Twenty-six participants were married. Sexual abuse occurred between the ages of 3 and 15 years, with an average duration of 7 years. Penetration took place in 18 cases and in 37 cases the perpetrator was a father or a close member of the family. Participants were selected by means of an individual assessment interview and the Trauma Symptom Checklist (Briere & Runtz, 1989), to ensure the presence of post-abuse symptoms and the absence of a post-traumatic stress disorder or a mood disorder. They were randomly assigned to a delayed treatment control group (n=14) and two treatment subgroups of 14 participants each. One participant dropped out of each of the treatment subgroups.

4.2 Measuring Instruments

Beck Depression Inventory (BDI)

The BDI (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) consists of 21 items, each containing four statements that reflect increasing severity of a given symptom of depression. The psychometric properties of the BDI have been examined extensively in clinical and non-clinical populations. The accumulated evidence strongly supports the BDI as a reliable and valid measure of the severity of current depression (Beck, Steer, & Garbin, 1988).

State-Trait Anxiety Inventory (STAI)

The STAI (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) comprises two 20-item scales measuring Trait Anxiety (the predisposition to perceive a wide range of non-threatening situations as dangerous) and State Anxiety (a transitory state of emotional arousal that fluctuates over time). Alpha coefficients have all been above .90 for samples of working adults, students and military recruits. Test-retest reliability ranged from .73 to .86, while concurrent validity with other anxiety questionnaires ranged from .73 to .85 (Spielberger et al., 1983). Only the State Anxiety subscale was used in the present study.

State-Trait Anger Expression Inventory (STAXI)

The STAXI (Spielberger, 1988) is a 44-item Likert-format inventory designed to assess the experience, expression and control of anger in individuals aged 13 years and older. It yields six scales (State Anger, Trait Anger, Anger-In, Anger-Out, Anger Control, and Anger Expression). Internal consistency coefficients of .93 and .86 were reported for State and Trait Anger respectively. Significant correlations with the Buss-Durkee Hostility inventory and with hostility measures on the

MMPI were also reported (Arita & Behr, 1998). Only the State Anger subscale was used in the present study.

Guilt Inventory (GI)

This inventory (Kugler & Jones, 1992) consists of 45 items and includes the subscales of Trait Guilt (defined as a continuing sense of guilt beyond immediate circumstances), State Guilt (present guilty feelings based on current or recent transgressions), and Moral Standards (defined as a code of moral principles without reference to specific behaviours or beliefs). Only scores on the State Guilt subscale were used in the present study. Kugler and Jones (1992) reported internal consistency (Cronbach's alpha) for State Guilt of .83 in a sample of 1041 adults. Test-retest reliability over a 10-week period interval for State Guilt was .56.

Coopersmith Self-Esteem Inventory

The Coopersmith Self-Esteem Inventory (Coopersmith, 1981) is a 25-item instrument that measures the self-evaluative attitude a person holds within his/her personal experience (e.g. family, social, self). High scores correspond to positive self-esteem. Reliability estimates are in excess of .80, while there is also adequate support for its construct validity, both convergent and discriminant (Adair, 1984).

Trauma Symptom Checklist (TSC-40)

The TSC-40 (Briere & Runtz, 1989; Elliot & Briere, 1992), a revision of Briere and Runtz's TSC-33, assesses the long-term sequelae of sexual abuse. It yields six sub-scales (Anxiety, Depression, Dissociation, Sexual Abuse Trauma Index, Sexual Problems, and Sleep disturbances) and a total score. The TSC-40 was found to be reliable and to display predictive validity with regard to childhood sexual victimisation. Women who reported a sexual abuse history scored significantly higher than did women with no history of abuse on each of the sub-scales and on the overall TSC-40 score (Elliot & Briere, 1992; Zlotnick et al., 1996). Convergent and divergent validity were also demonstrated (Zlotnick et al., 1996).

Survey of Personal Beliefs (SPB)

The SPB consists of 50 items measuring the following irrational evaluative beliefs, postulated by Rational-emotive behaviour therapy: Awfulising, Self-directed Shoulds, Other-directed Shoulds, Low Frustration Tolerance and Self-worth (Demaria, Kassinove, & Dill, 1989). Participants respond on a 6-point scale ranging from "totally agree" to "totally disagree", indicating the extent to which the questions apply to them. Higher scores indicate greater rationality. The SPB is a reliable

instrument with reliability coefficients above .57 for all the subscales. Cronbach's alpha ranged from .67 to .89, while the validity of the measure and its subscales have been demonstrated in a variety of contexts (Demaria et al., 1989; Kassinove, 1986; Muran, Kassinove, Ross, & Muran, 1989; Nottingham, 1992).

4.3 Procedure

Upon referral, a clinical psychologist conducted an assessment interview and the TSC-40 was administered. The objective of the study was explained to those individuals who met the criteria, their written consent for participation was obtained, and they were randomly assigned to the two treatment subgroups and the control group.

After completion of the questionnaires, the two treatment subgroups received Rational-emotive behaviour therapy separately in 10 weekly group sessions of 2 hours each. At the end of treatment and at follow-up of 8 weeks all participants again completed the questionnaires, except for the TSC-40 and SPB. The control group then received the same treatment.

The Rational-emotive behaviour therapy groups, conducted by an experienced Rational-emotive therapist, were structured around the major emotional and behavioural sequelae of childhood sexual abuse. In particular, emphasis was placed on dysfunctional beliefs in the areas of safety, trust, power/control, esteem and intimacy (McCann, Sakheim, & Abrahamson, 1988; McCann & Pearlman, 1990).

During the first session, participants discussed their experiences of sexual abuse and its negative emotional and behavioural effects and the basic principles of the A-B-C model of emotions were presented. Participants were trained, using examples from their own experiences, to understand the association between activating events (A), perceptions and evaluations of those events (B), and the resultant emotional-behavioural consequences (C). Homework assignments included bibliotherapy on the rationale of Rational-emotive behaviour therapy and A-B-C analysis of participants' own emotional experiences.

During the next session the criteria for dysfunctional beliefs were introduced. The remainder of this session, as well as sessions 3 and 4, were devoted to the development of cognitive and behavioural skills. Participants were assisted in identifying their dysfunctional emotions and behaviours, the underlying dysfunctional beliefs, disputing them and substituting them with more rational beliefs.

The same format was maintained for sessions 5 to 10, except that each session was devoted to a different symptom of childhood sexual abuse. Session 5 focused exclusively on the identification and disputation of those irrational beliefs underlying low self-esteem, while anxiety, depression, guilt, anger, and sexual problems were dealt with in sessions 6 to 10 respectively. Session 10 was concluded by a summary of the completed program.

At the end of each session homework was assigned based on what was discussed during the session, and every session commenced by controlling these assignments. Assignments included reading, analysing irrational beliefs, and imagery and behavioural exercises. Sessions were structured to obtain optimal participation from group members and care was taken to keep the treatment program similar for both therapy subgroups.

5. Results

5.1 Description of clinical significance

According to Jacobson, Follette and Revenstorf (1984) clinically significant change implies a return to normal functioning after treatment. This assumption might be operationalised in terms of post-treatment functioning (a) extending to 2 standard deviations beyond the mean of the dysfunctional population, or (b) falling within 2 standard deviations of the mean of the functional population, or (c) placing the individual closer to the mean of the functional population than the mean of the dysfunctional population. Criteria (b) and (c) for determining a cut-off point for clinically significant change depend on the availability of norms. When norms do not exist, criterion (a) is the only cut-off point available (Jacobson & Truax, 1991).

5.2 Clinically significant change after cognitive restructuring

As no South African norms were available for any of the instruments used in the present study, criterion (a) was used to determine cut-off points, except for the BDI, where a score of 9 was used as a cut-off as it indicates the boundary between normal and mild depression (Beck et al., 1961).

The pre-treatment means, standard deviations and cut-off points (mean plus 2 standard deviations) for each variable are shown in Table 1.

Table 1

Pre-treatment Means, Standard Deviations and Cut-off Points for Dependant Variables (N=26)

Variable	<u>M</u>	<u>SD</u>	Cut-off
Depression	43.00	12.42	9.00
State Anxiety	63.46	11.13	41.21
State Anger	31.73	7.82	16.10
State Guilt	41.12	8.18	24.76
Self-esteem	27.62	14.71	57.03

In addition to the cut-off point, indicating where a patient is post-treatment, Jacobson et al. (1984) propose a reliable change index (RC) to determine whether change is statistically reliable ($RC = X_2 - X_1 / S_{diff}$, where X_1 and X_2 represents pre- and post-treatment scores and S_{diff} the standard error of difference between the two test scores). Participants are subsequently classified according to cut-off point and RC as Recovered (passed cut-off and $RC > 1.96$), Improved but not Recovered (did not pass cut-off, but RC denoted reliable change), Unchanged (did not pass cut-off and did not score reliable change), or Deteriorated (lower score at post-test, $RC < -1.96$).

The classification of the participants in the present study according to cut-off point and RC subsequent to treatment is shown in Table 2.

Table 2
Pre- and Post-treatment Scores, Cut-off Point and Reliable Change Index for each Participant (N=26)

Depression										State Anxiety						State Anger						State Guilt						Self-esteem								
P	X ₁	X ₂	C	RC	X ₁	X ₂	C	RC	X ₁	X ₂	C	RC	X ₁	X ₂	C	RC	X ₁	X ₂	C	RC	X ₁	X ₂	C	RC	X ₁	X ₂	C	RC	X ₁	X ₂	C	RC				
01	56	6	✓	4.76	✓	R	56	37	✓	4.56	✓	R	27	15	✓	2.71	✓	R	46	24	✓	2.93	✓	R	40	52	X	1.36	X	U	40	52	X	1.36	X	U
02	30	3	✓	2.56	✓	R	53	27	✓	6.25	✓	R	17	13	✓	0.91	X	U	31	18	✓	1.73	X	U	32	60	✓	3.17	✓	R	32	60	✓	3.17	✓	R
03	38	6	✓	3.04	✓	R	44	28	✓	3.84	✓	R	32	11	✓	4.75	✓	R	41	32	X	1.20	X	U	44	68	✓	2.72	✓	R	44	68	✓	2.72	✓	R
04	48	14	X	3.23	✓	I	77	39	✓	9.13	✓	R	29	15	✓	3.17	✓	R	46	34	X	1.60	X	U	4	36	X	3.63	✓	I	4	36	X	3.63	✓	I
05	44	21	X	2.18	✓	I	73	51	X	5.29	✓	I	21	8	✓	2.94	✓	R	15	53	X	4.80	X	D	36	68	✓	3.63	✓	R	36	68	✓	3.63	✓	R
06	21	3	✓	1.71	X	U	60	33	✓	6.49	✓	R	21	16	X	1.13	X	U	39	24	✓	2.00	✓	R	28	60	✓	3.63	✓	R	28	60	✓	3.63	✓	R
07	37	3	✓	3.23	✓	R	69	36	✓	7.93	✓	R	29	29	✓	0	X	U	36	28	X	1.07	X	U	52	96	✓	4.99	✓	R	52	96	✓	4.99	✓	R
08	42	0	✓	3.99	✓	R	80	24	✓	13.45	✓	R	40	16	✓	5.43	✓	R	50	27	X	3.07	✓	I	28	36	X	0.91	X	U	28	36	X	0.91	X	U
09	28	0	✓	2.66	✓	R	47	22	✓	6.00	✓	R	21	10	✓	2.49	✓	R	38	17	✓	2.80	✓	R	48	88	✓	4.53	✓	R	48	88	✓	4.53	✓	R
10	53	2	✓	4.84	✓	R	56	19	✓	8.89	✓	R	40	10	✓	6.79	✓	R	48	15	✓	4.40	✓	R	32	80	✓	5.44	✓	R	32	80	✓	5.44	✓	R
11	41	7	✓	3.23	✓	R	59	25	✓	8.17	✓	R	19	10	✓	2.04	✓	R	41	25	X	2.13	✓	I	8	56	X	5.44	✓	I	8	56	X	5.44	✓	I
12	59	5	✓	5.13	✓	R	54	21	✓	7.93	✓	R	20	10	✓	2.26	✓	R	28	25	X	0.40	X	U	12	68	✓	6.35	✓	R	12	68	✓	6.35	✓	R
13	42	9	✓	3.13	✓	R	54	35	✓	4.56	✓	R	36	18	X	4.07	✓	I	48	30	X	2.40	✓	I	20	60	✓	4.53	✓	R	20	60	✓	4.53	✓	R
14	49	5	✓	4.18	✓	R	66	35	✓	7.45	✓	R	40	13	✓	6.11	✓	R	44	38	X	0.80	X	U	40	60	✓	2.27	✓	R	40	60	✓	2.27	✓	R
15	50	8	✓	4.94	✓	R	77	41	✓	8.65	✓	R	40	19	X	4.75	✓	I	40	26	X	1.87	X	U	32	64	✓	3.63	✓	R	32	64	✓	3.63	✓	R
16	30	16	X	1.33	X	U	64	44	X	4.80	✓	I	35	18	X	3.85	✓	I	42	30	X	1.49	X	U	32	40	X	0.91	X	U	32	40	X	0.91	X	U
17	29	6	✓	2.18	✓	R	79	29	✓	12.01	✓	R	38	10	✓	6.33	✓	R	40	29	X	1.47	X	U	44	44	X	0	X	U	44	44	X	0	X	U
18	37	10	X	2.56	✓	I	68	50	X	4.26	✓	I	33	22	X	2.49	✓	I	36	30	X	0.80	X	U	24	76	✓	5.89	✓	R	24	76	✓	5.89	✓	R
19	60	0	✓	5.70	✓	R	72	25	✓	11.29	✓	R	27	11	✓	3.62	✓	R	44	23	✓	2.80	✓	R	48	52	X	0.45	X	U	48	52	X	0.45	X	U
20	59	8	✓	4.84	✓	R	51	26	✓	6.01	✓	R	40	12	✓	6.33	✓	R	32	15	✓	2.27	✓	R	32	52	X	2.27	✓	I	32	52	X	2.27	✓	I
21	46	7	✓	3.70	✓	R	80	34	✓	11.05	✓	R	37	15	✓	4.98	✓	R	46	26	X	2.67	✓	I	8	72	✓	7.25	✓	R	8	72	✓	7.25	✓	R
22	28	5	✓	2.18	✓	R	56	22	✓	8.17	✓	R	40	12	✓	6.33	✓	R	50	26	X	3.20	✓	I	10	56	✓	5.21	✓	I	10	56	✓	5.21	✓	I
23	21	12	X	0.85	X	U	46	31	✓	3.60	✓	R	35	18	X	3.85	✓	I	48	30	X	2.40	✓	I	32	32	X	0	X	U	32	32	X	0	X	U
24	60	30	X	2.85	✓	I	70	36	✓	2.64	✓	R	40	12	✓	6.33	✓	R	50	28	X	2.93	✓	I	20	60	X	4.53	✓	R	20	60	X	4.53	✓	R
25	51	6	✓	4.27	✓	R	71	25	✓	3.57	✓	R	36	10	✓	5.88	✓	R	44	18	✓	3.67	✓	R	4	84	✓	9.07	✓	R	4	84	✓	9.07	✓	R
26	59	20	X	3.70	✓	I	68	20	✓	3.73	✓	R	32	20	X	2.71	✓	I	47	20	✓	3.60	✓	R	8	10	X	0.23	X	U	8	10	X	0.23	X	U

P: Participant
X₁: Pre-treatment score
X₂: Post-treatment score
C: Cut-off
RC: Reliable change index
✓: Passed cut-off or RC
X: Did not pass cut-off or RC
D: Deteriorated
I: Improved
U: Unimproved
D: Deteriorated

Table 3 summarises the results shown in Table 2.

Table 3
Number and Percentages of Participants Recovered, Improved or Unimproved after Treatment
(N=26)

Variable	Recovered		Improved		Unimproved/Deteriorated	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
State Anxiety	23	88.46	3	11.54	0	0
Depression	18	69.23	5	19.23	3	11.54
State Anger	17	65.38	6	23.08	3	11.54
Self-esteem	15	57.69	4	15.39	7	26.92
State Guilt	8	30.77	7	26.92	11	42.31

Table 3 indicates a differentiated treatment effect. Cognitive restructuring was highly effective in reducing State anxiety and, to a lesser extent, also in reducing the levels of depression, and State anger. However on self-esteem and State guilt only 57.69% and 30.77% of participants recovered respectively, while 26.92% and 42.31% respectively did not respond to treatment. Inspection of the results in Table 2 indicated that only 3 participants (11.54%) showed recovery on all 5 variables, 7 (26.92%) on 4 variables and 10 (38.46%) on 3 variables. Thus 10 participants (38.46%) recovered on 4 or 5 variables, while 20 participants (76.92%) recovered on 3 or more variables, in particular on depression, State anxiety and State anger.

5.3 Pretreatment variables as predictors of outcome

In order to investigate certain trauma- and patient-related variables as possible predictors of treatment outcome, the data was analysed by means of stepwise logistic regression. This procedure is a special form of regression analysis that may be utilised to predict a dichotomous (binary) variable from a set of predictors that may be continuous and categorical (Tabachnick & Fidell, 1996). This procedure does not face strict assumptions and is useful when using small samples.

Treatment outcome (responders versus non-responders) served as the dependent variable. The criterion of recovery used in the present study was clinically significant change on at least 4 of the 5 variables. This resulted in 10 responders and 16 non-responders, as previously indicated.

Two sets of possible outcome predictors were analysed separately. Trauma-related variables included duration and severity of abuse (whether penetration took place or not). Patient-related variables were level of education, relationship to perpetrator (close family member or friend/stranger), pre-treatment symptomatology (measured by means of the TSC-40), and dysfunctional beliefs prior to treatment (scores on the SPB subscales).

A stepwise logistic regression with backward elimination of predictors was utilised. A backward elimination procedure computes a regression equation with all the independent variables (predictors), and then stepwise eliminates the independent variable in the equation which contributes the least to the prediction of the dependent variables (Hair, Anderson, Tatham, & Black, 1998). The elimination process continues until a model of predictors contributes significantly to the prediction of the dependent variable or until all but one of the predictors have been eliminated from the equation.

5.3.1 Trauma-related variables

The full model containing the two trauma-related variables did not contribute significantly to treatment outcome ($\chi^2(2, N=26) = 1.041, P=.594$) (Table 4). The first predictor to be eliminated from the equation was duration of trauma. The remaining model (with severity of trauma the only predictor) also did not contribute significantly to the prediction of treatment outcome ($\chi^2(1, N=26) = 1.028, p=.311$).

Table 4
Logistic Regression Analysis of Model containing Trauma-related Variables as Predictors

Variables	<u>B</u>	<u>SE</u>	<u>Wald's Statistic</u>	<u>p</u>
Duration of abuse	-.105	.927	.013	.910
Severity of abuse	-.832	.863	.929	.335

Although not statistically significant, the full model with the two trauma-related variables correctly classified 61.5% of the cases into the outcome categories. Goodness-of-fit was evaluated by creating ordered groups of participants and then comparing the number actually in each group with the number predicted into each group by the logistic regression model. The Hosner-Lemeshow test then provides a comprehensive measure of predictive accuracy in the form of a chi-square value

(Hosner & Lemeshow, 1989). The Hosmer-Lemeshow statistic produced a non-significant chi-square ($\chi^2(2, N=26)=.741, p=.69$), indicating a good fit between actual and predicted frequencies.

5.3.2 Patient-related variables

Patient-related variables included level of education; relationship to perpetrator (i.e. close family member or friend/stranger); pre-treatment symptomatology (measured by the TSC-40) and dysfunctional beliefs prior to treatment, as measured by SPB subscales.

Neither the full model containing all the patient-related variables ($\chi^2(8, N=26)=12.875, p=.116$) nor the model after stepwise elimination of level of education and Low Frustration tolerance ($\chi^2(7, N=26)=12.871, p=.075$ and $\chi^2(6, N=26)=12.76, p=.065$ respectively) contributed significantly to prediction of treatment outcome.

Table 5

<u>Logistic Regression Analysis of Model containing Five Predictors</u>				
<u>Variables</u>	<u>B</u>	<u>SE</u>	<u>Wald's statistic</u>	<u>p</u>
Perpetrator	-.667	.408	2.676	.102
Awfulizing	.177	.133	1.755	.185
Self-directed shoulds	.092	.126	.530	.467
Other-directed shoulds	-.538	.248	4.354	.037
Self-worth	.365	.194	3.516	.061

After elimination of pre-treatment symptomatology from the equation, the regression model with the variables Relationship to perpetrator, Awfulising, Self-directed Shoulds, Other-directed Shoulds and Self-worth in the equation contributed significantly to the prediction of treatment outcome ($\chi^2(5, N=26)=12.266, p=.031$). This model correctly classified 76.9% of the cases into outcome categories, with the Hosner-Lemeshow statistic producing a non-significant chi-square ($\chi^2(5, N=26)=4.439, p=.728$), indicating a good fit between actual and predicted frequencies.

Investigating the role of the individual variables in the regression model, only Other-directed Shoulds was a unique predictor of treatment outcome. Table 5 shows regression coefficients, standard errors, Wald's statistics and p-values for each of the five predictors in the equation.

6. Discussion

The initial analysis of the data in terms of statistical significance (Rieckert & Möller, 2000) indicated significant reductions from pre- to post-treatment in depression, State anxiety, State anger, State guilt and low self-esteem. These improvements were maintained at follow-up.

A re-analysis of the data in terms of clinically significant change revealed a differentiated treatment effect. It showed that cognitive restructuring, based on Rational-emotive behaviour therapy, was highly effective in reducing State anxiety (88.46% of participants recovered), and, although to a lesser extent, also in reducing the levels of depression and State anger (69.23% and 65.38% recovered respectively). However, with respect to self-esteem, cognitive restructuring facilitated a clinically significant change in only 57.69% of participants (26.92% did not respond). On State guilt only 30.77% recovered, while 42.31% did not respond to treatment.

In addition, the results indicated that only 3 participants (11.54%) showed recovery on all 5 variables, 7 (26.92%) on 4 variables, and 10 (38.46%) on 3 variables. Thus, 10 participants (38.46%) recovered on at least 4 variables, while 20 participants (76.92%) recovered on at least 3 variables, mostly on depression, State anxiety and State anger. Six participants (23.08%) showed recovery on 2 or less than 2 variables.

The differentiated treatment effect found may indicate that guilt and low self-esteem in adult survivors of childhood sexual abuse are more resistant to change than their symptoms of depression, anxiety and anger. It may also be that the treatment in the present study inadvertently did not focus sufficiently on guilt and self-esteem.

That most participants recovered on some, but not all, measures created interpretative problems regarding the post-treatment status of individual participants. This problem could not be solved by deriving a composite score, as suggested by Jacobson and Truax (1991), as the instruments used do not measure the same construct. However, it seems reasonable to deduce that about 40% of participants gained significantly from treatment, while about 60% showed only moderate or no gain at all.

Although there are no similar studies with similar samples available with which to compare these findings, the present results are in accordance with Jacobson and Truax's (1991) observation that clinical significance data make treatments look less effective than standard comparisons would imply.

Although statistically not significant, the two trauma-related variables predicted treatment outcome correctly in 61.5% of the cases. This finding may serve as a tentative indication that recovery from the emotional consequences of childhood sexual abuse after cognitive restructuring might be associated with less severe abuse (no penetration) of longer duration, while more severe abuse (even of shorter duration) predicts poorer response to treatment. However, this hypothesis needs to be investigated further.

The patient-variables relating to level of education, pre-treatment symptomatology (measured by means of the TSC-40), and Low Frustration tolerance beliefs (measured by means of the SPB) did not predict treatment outcome. The remaining patient-variables (relationship to perpetrator, and the irrational beliefs of Awfulizing, Self-directed Shoulds, Other-directed Shoulds and Self-worth) significantly predicted treatment outcome, showing Other-directed Shoulds to be a unique predictor within this group. These variables correctly classified 76.9% of participants into the outcome categories, indicating that a poor response to treatment was associated with the perpetrator being a close family member and with more Other-directed Shoulds. Recovery, on the other hand, was associated with the perpetrator not being a close family member (friend or stranger), and with more Awfulizing, Self-directed Shoulds and negative Self-worth beliefs.

That a participant's relationship to the perpetrator and pre-treatment irrational, evaluative beliefs were shown to be the best predictors of treatment outcome should be regarded as hypotheses for further investigation, due to the limitations of the present study. Firstly, the small sample size resulted in a comparison of two very small groups (10 responders and 16 non-responders). Secondly, the criterion for recovery (clinically significant change on 4 of the 5 variables included in the study) was arbitrarily chosen, because a composite score could not be calculated. This problem needs to be addressed in future research of this nature. Thirdly, the number and nature of predictor variables included in this study were limited. Numerous other variables may serve as predictors of outcome, e.g. onset age of abuse, frequency of abuse, home environment and quality of parental support, disclosure variables (such as time lapsed between abuse and disclosure, other's responses to disclosure), severity of pre-treatment symptomatology, quantity and quality of patient compliance in treatment, etc. However, inclusion of a large number of these variables necessitates a large sample.

In addition to establishing post-treatment status in terms of clinically significant change, the same approach may be used in future studies of this nature to investigate the extent to which post-treatment recovery is maintained at follow-up. This will shed light on relapse rates after successful treatment and on possible predictors of relapse.

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